

# NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTOR

FXT603

**ISSUE 1 – MARCH 94**

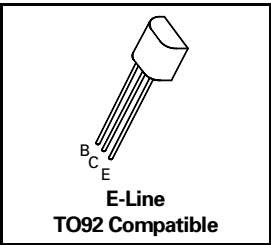
**FEATURES**

- \* 80 Volt  $V_{CE0}$
- \* Gain of 2K at  $I_C=1$  Amp
- \*  $P_{tot}=1$  Watt

**APPLICATIONS**

- \* Lamp, solenoid and relay drivers
- \* Replacement of TO126 and TO220 packages

REFER TO ZTX603 FOR GRAPHS



**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	100	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	10	V
Peak Pulse Current	$I_{CM}$	4	A
Continuous Collector Current	$I_C$	1	A
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^{\circ}C$

**ELECTRICAL CHARACTERISTICS (at  $T_{amb} = 25^{\circ}C$  unless otherwise stated).**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100			V	$I_C=100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	80			V	$I_C=10mA, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10			V	$I_E=100\mu A, I_C=0$
Collector Cut-Off Current	$I_{CBO}$			0.01 10	$\mu A$	$V_{CB}=80V, I_E=0$ $V_{CB}=80V, T_{amb}=100^{\circ}C$
Emitter Cut-Off Current	$I_{EBO}$			0.1	$\mu A$	$V_{EB}=8V, I_C=0$
Collector-Emitter Cut-Off Current	$I_{CES}$			10	$\mu A$	$V_{CES}=80V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			1.0 1.0	V	$I_C=0.4A, I_B=0.4mA^*$ $I_C=1A, I_B=1mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.8	V	$I_C=1A, I_B=1mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			1.7	V	$I_C=1A, V_{CE}=5V^*$
Static Forward Current Transfer Ratio	$h_{FE}$	2000 5000 2000 500		100K		$I_C=50mA, V_{CE}=5V$ $I_C=500mA, V_{CE}=5V^*$ $I_C=1A, V_{CE}=5V^*$ $I_C=2A, V_{CE}=5V^*$
Transition Frequency	$f_T$	150			MHz	$I_C=100mA, V_{CE}=10V$ $f=20MHz$

\*Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$